10/18/2016

Discharge Volume Calculation Report

CMC Land Holdings, LLC

EAC ENGINEERING

Michael C. Mitchell, P.E.

Exhibit 9

Table of Contents

Exhibit 9

1.0 Introduction

This report summarizes field work and calculations completed to determine the volume of wastewater discharged from the CMC Landholdings storage pond on 11/20/15 and the volume that could not be recovered. In addition, the report summarizes the amount of freeboard available immediately prior to the discharge.

2.0 Project Description

2.1 A topographic survey of the CMC Land Holdings, LLC wastewater ponds was completed in August 2016. The survey included the use of a pontoon raft to survey the bottom of both the storage pond and settling basin. Various features adjacent to the ponds were included in the survey, including a concrete TID irrigation ditch, adjacent field grades and pump boxes.

2.2 Additional topographic survey data was obtained on 10/4/16 to determine the elevation of the high water mark in both ponds, i.e., available freeboard, as well as additional elevation data for the concrete TID ditch on the south side of the ponds.

3.0 Discharge Volume Calculation Methodology

3.1 Survey of TID Canal. Based upon the survey results, it becomes apparent that the TID concrete canal south of the south storage pond embankment acted as a dam during the discharge. As the embankment eroded during the discharge event, the water from the storage pond flowed out of the pond to the south and intersected the TID concrete canal. The concrete canal essentially became a dam to prevent further erosion and further discharge, figure 1. As shown in in figure 6, only water at elevations higher than the top of TID canal could escape over the top of the TID canal and into the corrals. This is evidenced in figures 1-3, that show that the water surface in the storage pond, in the breach and in the canal were all at the same elevation at the time the breach was stopped with repairs to the embankment. The elevation of this water surface is the same as the canal south bank shown in figure 2, which was surveyed on 10/4/16. Therefore, water in the storage pond at elevations lower than the top of the TID canal was not released because the TID canal acted as a dam. See survey plan in appendix B and figure 6 for orientation of pond and canal.

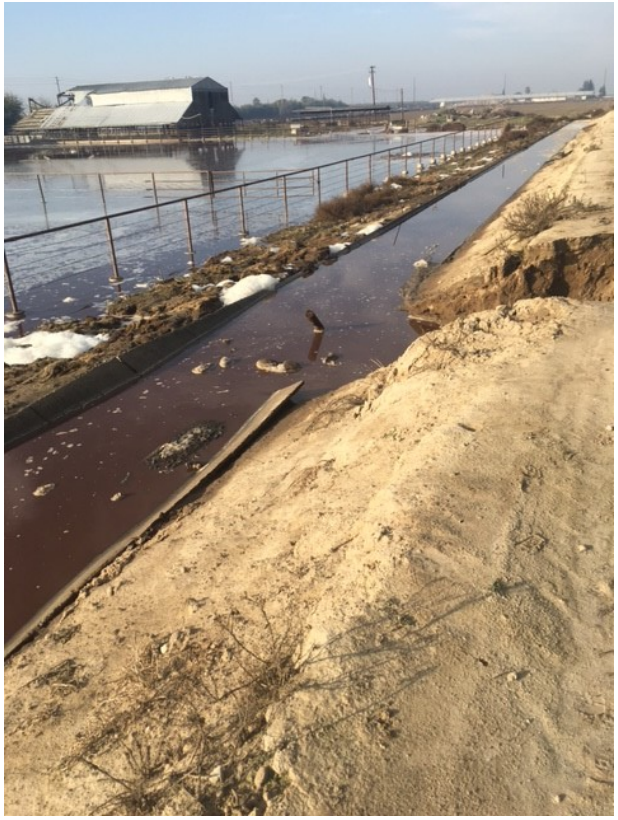

Figure 1. Water surface in TID canal at Location of breach. 11/20/15 – 8:12am

Figure 2. Water surface in breach 11/20/15 – 8:12am

Figure 3. Water surface in breach and storage pond. 11/20/15 – 8:11am

3.2 Survey of Highwater Marks. The photos taken at the site on 11/20/15 identify high water marks on various PVC and concrete structures within the settling basin and storage ponds, figure 4. As shown in figure 4, the concrete and PVC vertical pipes are still wet from the pond level prior to the discharge. These high water marks are still evident at the site, figure 5, and were surveyed on 10/4/16 to identify an elevation of the high water level in the storage pond and settling basin. The high water marks are both accumulated organic material affixed to the structure and red staining of the structures from wastewater. Several structures with high water marks were identified and surveyed in both the settling basin and storage pond. These high water marks indicate the water level, and amount of available freeboard, in the

settling basin and storage pond immediately prior to the discharge. Using the average elevation of the top of the embankment and the average elevation of the high water marks, the settling basin had 1.89 feet of freeboard(north embankment) and the storage pond had 2.04 feet of freeboard immediately prior to the discharge(south embankment), table 1. The amount of freeboard in both ponds were noted to be roughly the same. This is likely because a channel had been excavated between May and July 2015 in the interior embankment between the settling basin and storage pond due to a plugged weir box. This allowed the water surface in the settling basin and the storage pond to be equal, as the two ponds were directly connected, which was shown by the high water mark elevations.

Figure 4 – High Water Mark on pond structures – photo from RWQCB Inspection Report – 11/20/15 – 12:27pm

Figure 5 – High Water Mark on pond structures – Photo taken 10/4/16

Exhibit 9

3.3 Calculation of Water Discharged. Utilizing the elevation of the high water marks and the elevation of the water surface in the storage pond at termination of the discharge (i.e., the elevation of the TID canal), the volume of the water discharged can be calculated. The area of the pond was calculated at the high level and low level, then averaged and multiplied by the depth of water that was discharged. These calculations are shown in Table 1. The elevations of the top of pond embankment, high water level and low level are shown on the diagram in figure 6.

Table 1. Discharge Volume Calculations

	Storage	Settling
Pond Area (Top), sf	136,105	29,710
Pond Area (Mid), sf	112,414	25,686
Elev @ Top of Embankment	92.5	92.2
Elev @ High Water Mark	90.46	90.31
Elev @ Top of Canal	88.4	88.4
Area at High Water Mark, sf	126,439	28,189
Area at Top of Canal, sf	116,678	26,652
Avg Area of Discharge, sf	121,559	27,420
Volume, gallons	1,873,074	391,749
Total Volume, gallons	2,264,823	

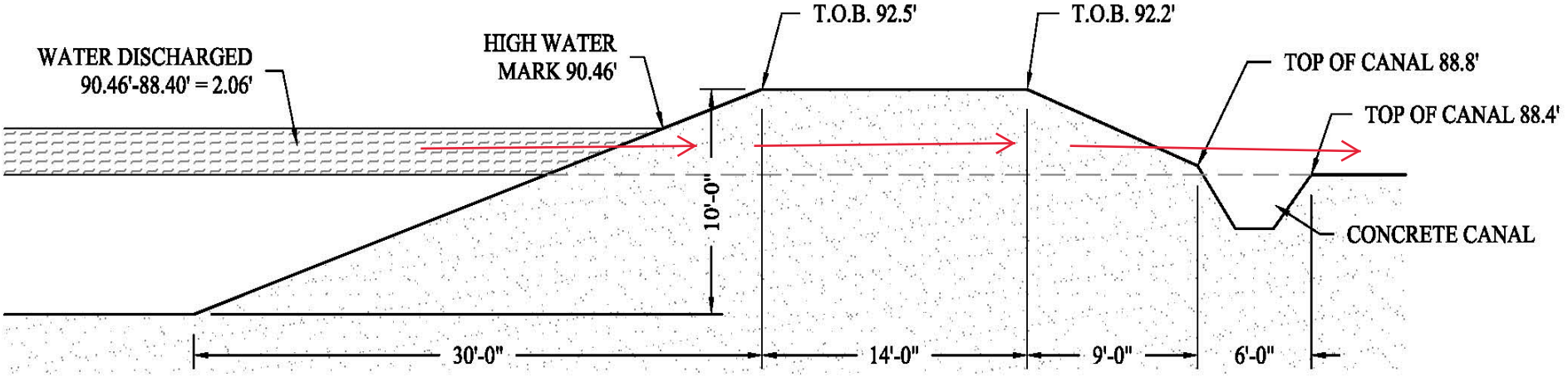

Figure 6 – Schematic Detail of discharge elevations

4.0 Volume of Wastewater Pumped to Storage Pond After Discharge

4.1 Pump Calculations. In addition to the calculation of amount of water discharged from the ponds, we were asked to calculate a volume of wastewater returned to the storage pond immediately following the discharge. TID electric meter usage records were consulted to determine the amount of time the sand trap manure pump operated. This facility pump is located in the corrals south of storage ponds and was used throughout the event to return water to the ponds. The information obtained from TID, included in appendix A, was utilized to establish an average monthly usage for the manure pump. The increased usage during November 2015, over the average monthly usage, was utilized to calculate the additional hours that the sand trap manure pump was operated during the discharge event. The manure pump likely began pumping shortly after the discharge occurred, however, the wastewater returned to the pond was only calculated from the time that the breach had been repaired, see calculations in Table 2. The time of operation of the manure pump after the discharge is consistent with the time the facility owner felt the pump was operating. The pump flowrate shown in Table 2 was calculated utilizing the California Pipe Method, see calculations in Table 3. The pipe gap, a, in these calculations was measured with a tape measure during manure pump operation on 10/19/16.

Table 2. Pump Energy Usage

Meter Period	Usage
12/4/15-1/5/16	2622
11/5/15-12/4/15	3298
10/6/15-11/5/15	2669
Avg Dec & Oct	2645.5
Nov - Avg	652.5

Desc	Hp	KW	Kw-hr	Total Hrs*	Pump Back Hrs**	Vol Pumped, gal
WW Pickup Pump	40	35.10588	652.5	18.59	14.44	1,046,775

Notes:
* - Total extra hours pump ran during Nov 2015 billing
** - Hours pump operated after pond discharge ended

Table 3. Pump Flowrate Calculation

Pump Discharge by California Pipe Method(B.R. Vanleer)

Q = 8.69*(1-a/d)^1.88*d^2.48

d	Pipe ID	ft	0.9775
a	Gap	ft	0.4375
d^2.48			0.945126
1-(a/d)			0.55243
Q	Flowrate	cfs	2.691473
		gpm	1208.472

4.2 Total Volume Pumped Back to Lagoon. The volume of wastewater pumped back to the storage pond, based on TID electric meter records and calculated pump flow rate is shown in Table 2 to be 1,046,775 gallons.

5.0 Conclusion

The utilization of topographic surveying of the settling basin and storage pond has provided data necessary to determine the amount of wastewater discharged by the pond breach that occurred on 11/20/15. The surveyed elevations, in combination with the numerous photographs depicting the condition of the pond on the day of discharge have provided the information needed to estimate the volume of wastewater discharged from the ponds. TID electrical service records have been utilized to determine how long the facility pump in the corral south of the storage ponds was operated to pump wastewater back to the pond. A pump flowrate was calculated to be combined with the pump time to determine the volume of water pumped back to the storage pond. This was calculated to be 1,046,775. Based upon the information above, the volume of water discharged from the pond on 11/20/15 has been calculated as 2,264,823 gallons and the volume of water pumped back to the pond after the discharge has been calculated as 1,046,775. In addition to the water pumped back to the pond, there was also 1,080,000 gallons applied to the Silva cropland (Appendix D) by TID and 9,000 gallons (Appendix E) moved to the pond by vacuum trucks hired by CMC. Collectively, these values indicate a remaining 129,048 gallons of wastewater that was not returned to pond or applied to cropland.

Total Volume Released:	**2,264,823 gallons**
Volume Pumped Back to Lagoon:	**- 1,046,775 gallons**
Volume Applied by TID to Cropland:	**- 1,080,000 gallons**
Volume Captured by Vacuum Trucks:	**- 9,000 gallons**
Remainder:	***129,048 gallons***

Table of Appendices

APPENDIX A

TID Meter Records

Exhibit 9

WATER & POWER
Serving Central California since 1887

Electric Service

Customer Service (209) 883-8222 or (209) 892-4953
Payments by Phone 1-866-742-8991
Power Outages (209) 883-8301
www.tid.com

Account Number: 157196-013583-0001

JOHN JR M AZEVEDO

Issue Date: 11/05/2015

Month:	November 2015
Service:	ELECTRIC
Location:	4207 W LINWOOD AVE TURLOCK
Schedule:	FE - Farm Service - Energy

Total Amount Due 11/29/2015	**$427.60**

Usage History	Dates	Days	kWh / Day	$ / Day
Last Year	10/03/2014-11/03/2014	31	99.7	$15.49
Current	10/06/2015-11/05/2015	30	89.0	$14.25
Last Month	09/04/2015-10/06/2015	32	72.3	$11.71

Meter Number	Current-Prior Read Dates	Current Meter Reading	Prior Meter Reading	Difference	Multiplier	Usage	Usage Type
E098960	11/05/2015-10/06/2015	14,093	11,424	2,669	1	2,669	kWh-Primary Reading
E098960	11/05/2015-10/06/2015	33.57 - Info Only	30.69 - Info Only		1	33.57	kW-Demand Reading

ELECTRIC SERVICE CHARGES/CREDITS	USAGE	TYPE	RATE	TOTAL
Customer Charge		Summer	Fixed Charge	$28.00
Primary Energy Charge	2,669	Summer kWh	.1231	$328.55
Power Supply Adjustment	2,669	Summer kWh	-.005	-$13.35
Environmental Charge	2,669	Summer kWh	.0269	$71.80
Public Benefits Charge				$11.83
State of CA Surcharge	2,669	Summer kWh	.00029	$0.77
Total Amount Billed				**$427.60**

ACCOUNT ACTIVITY SINCE LAST STATEMENT			
10/06/2015	Beginning balance as of last statement		$88.42
10/22/2015	Payment Made	Mail-2 10/22/15	-$88.42
Subtotal			**$0.00**
Total Amount Due			**$427.60**

Please detach and return with your payment. Make check payable to Turlock Irrigation District.

WATER & POWER
Serving Central California since 1887
PO BOX 819007
TURLOCK, CA 95381-9007

STATEMENT ENCLOSED

Account Number: 157196-013583-0001

Total Amount Due 11/29/2015	**$427.60**
Amount Paid	

REMIT TO:

JOHN JR M AZEVEDO
PO BOX 1071
HILMAR CA 95324-1071

TURLOCK IRRIGATION DISTRICT
PO BOX 819007
TURLOCK, CA 95381-9007

1157196013583000150000042760 90

Exhibit 9

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Electric Service

Customer Service (209) 883-8222 or (209) 892-4953
Payments by Phone 1-866-742-8991
Power Outages (209) 883-8301
www.tid.com

Account Number: 157196-013583-0001

JOHN JR M AZEVEDO

Issue Date: 12/04/2015

Month:	December 2015
Service:	ELECTRIC
Location:	4207 W LINWOOD AVE TURLOCK
Schedule:	FE - Farm Service - Energy

Total Amount Due 12/28/2015	**$461.70**

Usage History	Dates	Days	kWh / Day	$ / Day
Last Year	11/03/2014-12/03/2014	30	100.7	$13.81
Current	11/05/2015-12/04/2015	29	113.7	$15.95
Last Month	10/06/2015-11/05/2015	30	89.0	$14.25

Meter Number	Current-Prior Read Dates	Current Meter Reading	Prior Meter Reading	Difference	Multiplier	Usage	Usage Type
E098960	12/04/2015-11/05/2015	17,391	14,093	3,298	1	3,298	kWh-Primary Reading
E098960	12/04/2015-11/05/2015	41.65 - Info Only	33.57 - Info Only		1	41.65	kW-Demand Reading

ELECTRIC SERVICE CHARGES/CREDITS	USAGE	TYPE	RATE	TOTAL
Customer Charge		Winter	Fixed Charge	$28.00
Primary Energy Charge	3,298	Winter kWh	.1057	$348.60
Power Supply Adjustment	3,298	Winter kWh	-.005	-$16.49
Environmental Charge	3,298	Winter kWh	.0269	$88.72
Public Benefits Charge				$12.79
State of CA Surcharge	3,298	Winter kWh	.00029	$0.96
Total Amount Billed				**$462.58**

ACCOUNT ACTIVITY SINCE LAST STATEMENT			
11/05/2015	Beginning balance as of last statement		$427.60
12/02/2015	Payment Made	D4 DROP 12/01/15	-$427.60
12/04/2015	Deposit Interest		-$0.88
Subtotal			**-$0.88**
Total Amount Due			**$461.70**

Please detach and return with your payment. Make check payable to Turlock Irrigation District.

WATER & POWER
Serving Central California since 1887
PO BOX 819007
TURLOCK, CA 95381-9007

STATEMENT ENCLOSED

Account Number: 157196-013583-0001

Total Amount Due 12/28/2015	**$461.70**
Amount Paid	

JOHN JR M AZEVEDO
PO BOX 1071
HILMAR CA 95324-1071

REMIT TO:

TURLOCK IRRIGATION DISTRICT
PO BOX 819007
TURLOCK, CA 95381-9007

1157196013583000150000046170 70

Exhibit 9

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Customer Service (209) 883-8222 or (209) 892-4953
Payments by Phone 1-866-742-8991
Power Outages (209) 883-8301
www.tid.com

Account Number: 157196-013583-0001

JOHN JR M AZEVEDO

Issue Date: 01/05/2016

Month:	January 2016
Service:	ELECTRIC
Location:	4207 W LINWOOD AVE TURLOCK
Schedule:	FE - Farm Service - Energy

Total Amount Due 01/29/2016	**$373.67**

Usage History	Dates	Days	kWh / Day	$ / Day
Last Year	12/03/2014-01/05/2015	33	123.9	$17.17
Current	12/04/2015-01/05/2016	32	81.9	$11.68
Last Month	11/05/2015-12/04/2015	29	113.7	$15.95

Meter Number	Current-Prior Read Dates	Current Meter Reading	Prior Meter Reading	Difference	Multiplier	Usage	Usage Type
E098960	01/05/2016-12/04/2015	20,013	17,391	2,622	1	2,622	kWh-Primary Reading
E098960	01/05/2016-12/04/2015	36.75 - Info Only	41.65 - Info Only		1	36.75	kW-Demand Reading

ELECTRIC SERVICE CHARGES/CREDITS	USAGE	TYPE	RATE	TOTAL
Customer Charge		Winter	Fixed Charge	$28.00
Primary Energy Charge	2,622	Winter kWh	.1057	$277.15
Power Supply Adjustment	2,622	Winter kWh	-.005	-$13.11
Environmental Charge	2,622	Winter kWh	.0269	$70.53
Public Benefits Charge				$10.34
State of CA Surcharge	2,622	Winter kWh	.00029	$0.76
Total Amount Billed				**$373.67**

ACCOUNT ACTIVITY SINCE LAST STATEMENT			
12/04/2015	Beginning balance as of last statement		$461.70
12/23/2015	Payment Made	Farmers 12/22/15	-$461.70
Subtotal			**$0.00**
Total Amount Due			**$373.67**

Please detach and return with your payment. Make check payable to Turlock Irrigation District.

WATER & POWER
Serving Central California since 1887
PO BOX 819007
TURLOCK, CA 95381-9007

STATEMENT ENCLOSED

Account Number: 157196-013583-0001

Total Amount Due 01/29/2016	**$373.67**
Amount Paid	

JOHN JR M AZEVEDO
PO BOX 1071
HILMAR CA 95324-1071

REMIT TO:

TURLOCK IRRIGATION DISTRICT
PO BOX 819007
TURLOCK, CA 95381-9007

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APPENDIX B

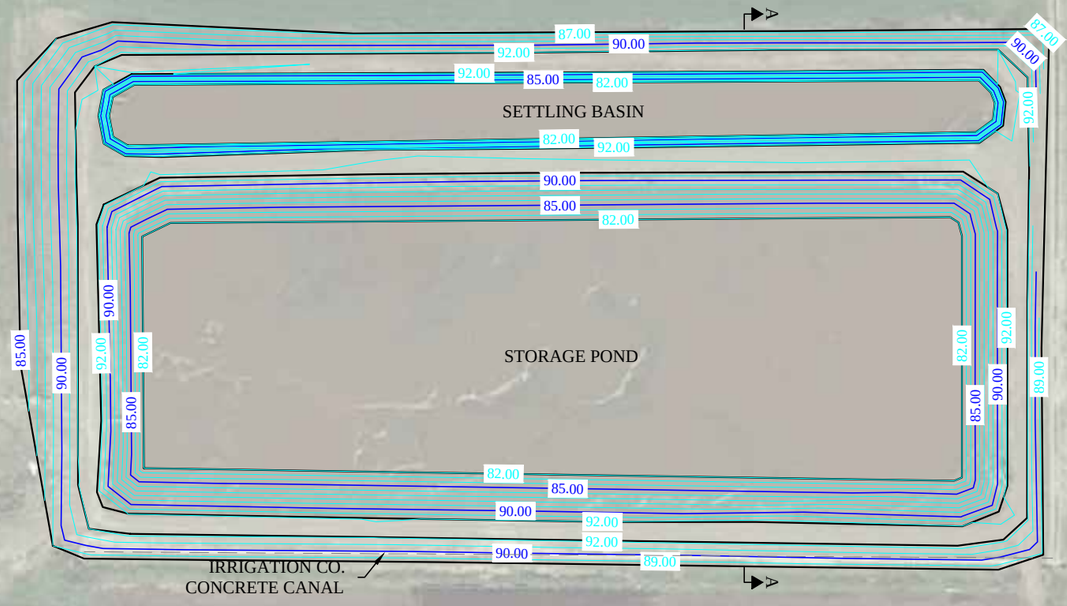
Topographic Survey of

Settling Basin and Storage Pond

Exhibit 9

SETTLING BASIN
TOP AREA - 29,710 SQ.FT.
MID AREA - 25,686 SQ.FT.
BOTTOM AREA - 21,393 SQ.FT.

STORAGE POND
TOP AREA - 136,105 SQ.FT.
MID AREA - 112,414 SQ.FT.
BOTTOM AREA - 90,572 SQ.FT.



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California Office
1883it E. Clausen -- Turlock, CA 95380
(209) 664-1087 -- (209) 664-0161 (fax)
Idaho Office
391 S. 1st E. -- Soda Springs, ID 83276
(208) 547-3722 -- (208) 547-3548 (fax)

EAC ENGINEERING

CMC LANDHOLDINGS
4702 W. LINWOOD AVE.
TURLOCK, CA

POND & CORRAL
AREA

PROJECT #: 16-076
DESIGN: TCK
DRAWN: TCK
REVIEW: MCM
DATE: 10/18/16
SCALE: 1" = 100'-0"
DWG NAME: POND SURVEY
SHEET 1
OF 3 SHEETS

Exhibit 9

APPENDIX C

2/1/16 CMC Response

Exhibit 9

CMC Land Holdings LLC
1351 Geer Rd. #103
Turlock, Ca. 95380

February 1, 2016

Andrew Altevogt
Assistant Executive Officer
Central Valley Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Attn: Charlene Herbst, Chief, Confined Animal Unit

Via e-mail: Charlene.herbst@waterboards.ca.gov

Re: 13267 Order dated January 15, 2016, CMC Land Holdings LLC, 4207 West Linwood Avenue, Turlock, Stanislaus County

Dear Ms. Herbst,

This letter represents CMC Land Holdings LLC response to the January 15, 2016 Regional Water Quality Control Board (RWQCB) correspondence entitled *California Water Code Section 13264 Order – Directives for Submitting Documentation Pertaining Wastewater Discharge on 20 November 2015 and Mitigation Measures at CMC Landholdings LLC, 4207 W Linwood Avenue, Turlock, Stanislaus County (Order).* Specifically this letter is intended to satisfy Item #5 of the Order, which requested the submittal of application information for released wastewater that was applied to cropland conveyed by the Turlock Irrigation District canal system. CMC Land Holdings LLC response to Item #5 of the Order is provided below.

Between approximately 12:00 PM on 11/20/15 through 8:00 AM on 11/21/15, an estimated 1,080,000 gallons of process wastewater (900 gallons per minute multiplied by 1,200 minutes) process wastewater from 4207 W. Linwood Ave. Turlock, Ca. 95380 was applied on a 19 acre parcel of farmland located on the northwest corner of Bradbury Rd. and Mitchell Rd. (Stanislaus Co. Assessor's Parcel Number 058-029-008) referred to as the "Estacio NW" field. The parcel is owned by G.J. Silva Dairy Inc. 3107 S. Prairie Flower Rd. Turlock, Ca. 95380 and is currently planted to winter forage.

CMC Land Holdings LLC will continue to work with the RWQCB and abate the potential impacts associated with the release that occurred on November 20, 2015. Items 1, 2, 3, 4, 6, 7, and 8 of the Order will be provided under separate cover to the RWQCB prior to the February 15, 2016 deadline. If you have any questions please feel free to call me at (209) 541-7001.

Exhibit 9

Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,

Michael Borba

APPENDIX D

Silva Cropland Application Response

Exhibit 9

Print | Close Window

Subject: Fwd: CMC Landholdings LLC. 2-15-16 Response
From: "Mike Borba" <mborba25@aol.com>
Date: Wed, Mar 09, 2016 2:56 pm
To: Nicole Gleason <ngleason@diepenbrock.com>
Attach: Estacio NW summary.pdf

-----Original Message-----
From: Joe Ramos <jramos@fragservices.com>
To: Getachew, Girma@Waterboards <Girma.Getachew@waterboards.ca.gov>
Cc: Mike Borba <mborba25@aol.com>; Paul Sousa <PaulS@westernunitedairymen.com>; Greg McIver <gmciver@thesourcegroup.net>; George Rodarakis <grodarakis@rodsoulaw.com>
Sent: Thu, Feb 11, 2016 3:34 pm
Subject: RE: CMC Landholdings LLC. 2-15-16 Response

Hi Girma,

As per your request I am sending you the test results for the wastewater applied to the Estacio 3 (NW) field. In addition please see the attached application rate applied between 11/20 and 11/21 as well as the historical forage removal rate for the subject field .

I also double checked with Dores Ag Services who spreads for Silva and no solid manure was applied on this specific field prior to fall planting.

In summary,

103 Lbs. of nitrogen was applied per acre between 11/20 and 11/21 in the form of wastewater.

No additional nutrient applications on this specific crop either before or after 11/21 has occurred.

Anticipated nitrogen removal for this crop is estimated at 150 Lbs. per acre, actual removal rate in the last Annual Report submitted to your office was 143.68 Lbs. per acre.

Please let me know if you have any additional questions.

Joe

From: Getachew, Girma@Waterboards [mailto:Girma.Getachew@waterboards.ca.gov]
Sent: Thursday, February 11, 2016 12:38 PM
To: Joe Ramos <jramos@fragservices.com>
Cc: Herbst, Charlene@Waterboards <Charlene.Herbst@waterboards.ca.gov>
Subject: RE: CMC Landholdings LLC. 2-15-16 Response

Joe,
We received your letter of 4 February 2016. Please provide the following information:
total nitrogen in wastewater (mg/L)
nitrogen application rate (lbs. /acre)

Exhibit 9

Potential nitrogen removal by the winter crop from the field you indicated in your letter.
Applied-to-removed nitrogen ratio (if current yield is not available, previous yield can be used)

Thanks,

Girma Getachew, PhD, PAS
Environmental Scientist
Confined Animal Facility Regulatory Unit
Phone 916 464 4851; Fax 916 464 4800

From: Joe Ramos [mailto:jramos@fragservices.com]
Sent: Thursday, February 04, 2016 2:10 PM
To: Herbst, Charlene@Waterboards; Altevogt, Andrew@Waterboards; Young, Vanessa@Waterboards; Getachew, Girma@Waterboards
Cc: Mike Borba; George Rodarakis; Greg McIver; Paul Sousa; Clarence Olivireia
Subject: CMC Landholdings LLC. 2-15-16 Response

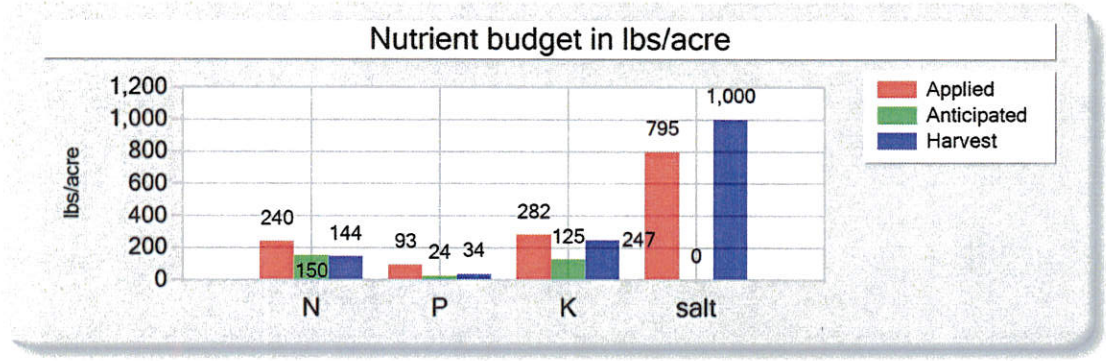
Charlene, please see attached response to Item 5 of your request dated 1/15/16.

Thank you
Joe

Joe Ramos
CEO / CFO
F&R Ag Services, Inc.
2857 Geer Road, Suite A
Turlock, CA 95382
Office – 209-250-2471
Cell – 209-226-2375
Fax – 209-250-2472

Estacio 3 - 10/24/2013: Oats, silage-soft dough

Field name: Estacio 3 Crop: Oats, silage-soft dough Plant date: 10/24/2013



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00
Dry manure	207.98	93.47	281.98	0.00
Process wastewater	0.00	0.00	0.00	0.00
Fresh water	24.70	0.00	0.00	795.36
Atmospheric deposition	7.00	0.00	0.00	0.00
Total nutrients applied	239.68	93.47	281.98	795.36
Anticipated crop nutrient removal	150.00	24.00	124.50	0.00
Actual crop nutrient removal	143.68	34.48	247.14	1,000.16
Nutrient balance	96.00	58.99	34.84	-204.80
Applied to removed ratio	1.67	2.71	1.14	0.80

Fresh water applied
7,057,500.00 *gallons*
259.90 *acre-inches*
13.68 *inches/acre*

Process wastewater applied
0.00 *gallons*
0.00 *acre-inches*
0.00 *inches/acre*

Total harvests for the crop
1 *harvests*

Exhibit 9

WASTEWATER APPLICATIONS

Operation Name:		G J Silva 1 & 2															Year:	2016	
Preparer of Records:		Joe Ramos																	
Date	Field	Acres	Crop	Source Description (PO,SLT,FM,PD)	Application Rate (GPM)	Run Time (Hours)	Total Gallons Applied	Rain Day Prior to Event	Rain Day of Event	Rain Day After Event	Application Rate per acre (Gallons/acre)	N (PPM)	P (PPM)	K (PPM)	EC (umhos/cm)	TDS (mg/L)	Lbs/Acre N	Lbs/Acre P	Lbs/Acre K
11/20/2015	Estacio 3 (NW)	19.0	Forage	PO	900	20	1,080,000	N	N	N	56,842	218.0	16.8	266.0	1,950.0	1,350.0	103.41	7.97	126.18

F and R Ag Services, Inc.

Exhibit 9

Exhibit 9

DENELE ANALYTICAL, INC.
1232 South Ave. Turlock, CA 95380
Phone (209) 634-9055 - Fax (209) 634-9057

www.denelelab.com

Compliance Analysis Report

Grower
G.J. Silva Dairy
3107 S. Prairie Flower Rd.
Turlock, CA 95380

Customer
F & R Ag Services
2857 Geer Rd, Ste A
Turlock, CA 95382

PURCHASE ORDER: N/A
RECEIVED DATE: 11/24/2015 2:36 pm
SUBMITTED BY: G.R
ANALYZED DATE:

Processed Water (H3)
SOURCE: Process Waste Water

Sample ID	Lab ID	Analyte	Method Ref	Result	Units	Lbs/10K Gallons
E Stacio NW	15110342A	Electrical Conductivity (EC)	EPA 120.1	1.95	mmhos/cm	N/A
		Soluble Salts (SALT-SOL)		1248	ppm	N/A
		Total Kjeldahl Nitrogen (TKN)	SM 4500-NH3 C	218	mg/L	18.2
		Ammonium Nitrogen (NH4-N)	SM 4500-NH3 C	47.6	mg/L	3.97
		Phosphorus (P)	SM 4500-P E	16.8	mg/L	1.4
		Potassium (K)	EPA 200.7	266	mg/L	22.2
		Total Dissolved Solids (TDS)	SM 2540C	1,350	mg/L	113

Laboratory Quality Control	LCS %	MS %	MSD %	Dup mg/L	Sample mg/L	RPD %
Total Kjeldahl Nitrogen (TKN)	106	106	109			2.8
Ammonium Nitrogen (NH4-N)	104	84.0	89.6			6.5
Phosphorus (P)	90.2	111.3	104.6			4.03
Potassium (K)	103	110	110			0.10
Total Dissolved Solids (TDS)	101			5,410	5,370	0.74

ELAP Certificate No.: 2714

DENELE ANALYTICAL, INC.

1232 SOUTH AVENUE
TURLOCK, CA 95380
PH# 209-634-9055 FAX# 209-634-9057

DAIRY COMPLIANCE

Client: G J Silva
Mailing address:
(not facility address)
Phone#:

Authorized Copy Released To: F&R Ag Services
Sampled By: Joe Ramos
Project ID:

ANALYSIS TO BE COMPLETED:

IRRIGATION/GROUND WATER
- **H1** EC*, NO3-N, NH4-N*
- **H6** EC, TN, TDS
- **H7** Combination of H1 & H6
- **H14** EC, NO3-N, NH4-N, Ca, Mg, Na, Bicarb Carb, SO4, Cl, TDS

PROCESS WASTE WATER
- **H3** EC*, NH4-N, TKN, TP, K, TDS
- **H4** EC*, NO3-N, NH4-N, TKN, TP, K, TDS
- **H5** Ca, Mg, Na, Bicarb, Carb, SO4, Cl
- **H8** Combination of H3 &H5
- **H9** Combination of H4 &H5

TILE DRAIN
- **H2** EC*, NO3-N, TP, NH4-N*, TDS

Required Field Measurement

___ (Check here if performed)

DISCHARGE WATER
- **E1** EC*, Temp*, pH*, NO3-N, NH3-N, NH4-N, TKN, TP, K, TDS, Dissolved Oxygen*, BOD 5, TSS, Total & Fecal Coliforms
- **E2** EC,* Temp*, pH*, NO3-N, NH3-N*, NH4-N*, Turbidity, TP, Dissolved Oxygen*, Total & Fecal Coliforms
- **E3** EC*, Temp*, pH*, NO3-N, NH3-N*, NH4-N*, TP, Total & Fecal Coliforms
- **E4** EC*, Temp*, pH*, NO3-N, NH3-N*, NH4-N*, Turbidity, TP, Total & Fecal Coliform

MANURE
- **M1** % Moisture
- **M3** TN TP, K, % Moisture
- **M4** Ca, Mg, Na, Bicarb, Carb, SO4, Cl, Ash
- **M7** Combination of M3 & M4

PLANT TISSUE
- **F18** % Moisture, Ash, TN, P, K, DM and as received
- **F18+** % Moisture, Ash, TN, P, K, DM and as received (Package also includes NIR DCAD)
- **F19+** % Moisture, TN (Package includes complete plant tissue analysis)

SOIL
- **K3** Soluble Phosphorus
- **K4** 1ft NO3, Organic Matter
- **K5** Pre-Plant (2ft NO3), Fall (1-2ft NO3), Fall (2-3ft NO3)
- **K6** 0-1ft EC, NO3, Soluble P, K, Organic Matter
- **K7** Combination of K3 & K4
- **K8** Combination of K3 & K5

	Date Collected	Time Collected	Sample ID	Description	Temp	Well Purge	Analysis H1	Analysis H3	Analysis M3	Analysis F18	Analysis OTHER
1	11/20/15		Estacio NW	Lagoon	19.4			✓			
2			irrigation								
3											
4											
5											
6											
7											
8											
9											
10											

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time	(LABORATORY USE ONLY) Logged In By:	LABORATORY NUMBER
1st	Jennifer Sawyer	F&R				
2nd		DENELE ANALYTICAL, INC.	11/24/15 2:36pm			1511034 2

Exhibit 9

APPENDIX E

Invoices for Vacuum Trucks

Exhibit 9

Exhibit 9

GARY'S RENT A CAN, INC.

SERVICING YOU SINCE 1980

QUALITY ABOVE THE REST!

21311 BLOSS AVENUE
HILMAR, CA 95324

Ph: 209-667-2840 Fax: 209-667-2494
Email: gary@garysrentacan.com

Invoice

Billing Address	Service Address
CMC LAND HOLDING C/O CLARENCE OLIVERIA 1351 GEER RD. TURLOCK, CA 95380	CMC LAND HOLDING 4207 LINWOOD & WASHINGTON TURLOCK, CA 95380

Phone: (209) 988-5254 Fax: 0

Cust #	Site #	Date	Clerk	Terms	P.O.#	Invoice #	Page
OLIVERIAC	2537	11/23/2015	GB	0		A-63127	Page 1 / 1

DESCRIPTION	RATE	QTY	TAX%	TAX	AMOUNT
11/20/2015					
Work Order=114528 Date=11/20/2015	900.00	2			1,800.00
2 TRUCKS & 2 DRIVERS 2:30PM-5:30PM					
11/20/2015					
CLEAN THE ROCKS & SAND OUT OF 2 TRUCKS TANKS	200.00	2			400.00
		Total			**2,200.00**

Health code requires weekly service, but cleaning labor is optional.

Thank You!

Statement as of 11/24/2015	Future: 0.00	Current: 2,200.00	30 Day: 0.00	60 Day: 0.00	90 Day: 0.00	Total Due: 2,200.00

Please detach here and return the bottom portion with your payment.

Div:A Cust #: OLIVERIAC Site #:2537 Invoice #: 63127

From CMC LAND HOLDING
C/O CLARENCE OLIVERIA
1351 GEER RD.
TURLOCK, CA 95380

Invoice #	**A-63127**
Total Pre-Tax	2,200.00
Total Tax	0.00
Invoice Total	2,200.00
Paid Amt	0.00
Adjustment Amt	0.00
Balance	**2,200.00**

To GARY'S RENT A CAN, INC.
21311 BLOSS AVENUE
HILMAR, CA 95324

All invoices more than 30 days old are charged a late fee of 1.5% per month or 18% per year

Exhibit 9

A & A PORTABLES, INC.

201 Roscoe Rd.
Modesto, CA 95357-1828

Ph: 209-524-0401 Fax: 209-524-0427

A&A Portables — Restrooms, Fence, Storage Containers
www.aaportables.com

Invoice

Billing Address	Service Address
CMC LAND HOLDINGS INC ATTN : CLARENCE 1351 GEER ROAD TURLOCK, CA 95380	BORBA BTWN TEGNER & WASHINGTON 4207 WEST LINWOOD TURLOCK, CA 95380

Phone: (209) 633-1821 Fax: (209) 668-8833

Due Date	Cust #	Site #	Date	Clerk	Terms	P.O.#	Invoice #	Page
12/4/2015	CLARENCEOL	58007	11/24/2015	BG	NET10		I-635887	Page 1 / 1

DESCRIPTION	RATE	QTY		AMOUNT
11/20/2015				
TRUCK TIME+ 2 MEN HOURLY OVERTIME RATE	175.00	3.5		612.50
				612.50
			Paid Amt	0.00
			Adjustment Amt	0.00
			Balance	**612.50**

Statement as of 11/24/2015	Future: 0.00	Current: 612.50	30 Day: 0.00	60 Day: 0.00	90 Day: 0.00	Total Due: 612.50

Please detach here and return the bottom portion with your payment.

Div:1 Cust #: CLARENCEOL Site #:58007 Invoice #: 635887

From CMC LAND HOLDINGS INC
ATTN : CLARENCE
1351 GEER ROAD
TURLOCK, CA 95380

Please provide your email address below.

_ AMEX _ VISA _ M/C _ Discover ☐ Check Enclosed

If paying by Credit Card, please fill out below		Invoice Balance 612.50
Card Number		Previous Balance 0.00
Exp. Date	CVC Code	Total Due 612.50
Choose One: ☐ 1 Time Charge ☐ Charge Monthly		
Signature		Amount Paid

If credit card address different from billing address above, please write in below.

To A & A PORTABLES, INC.
201 Roscoe Rd.
Modesto, CA 95357-1828

All invoices more than 30 days old are charged a late fee of 1.5% per month or 18% per year

Exhibit 9

Clark's Septic Service Inc.

P.O. Box 1475
Hughson, CA 95326
(209) 537-6624

Statement

DATE
11/25/2015

BILL TO

Cmc landholdings
1351 Geer Rd #103
Turlock, Ca. 95380

TERMS	DUE DATE	AMOUNT DUE	AMOUNT ...
Due on receipt	11/25/2015	$2,075.00	

DATE	DESCRIPTION	AMOUNT	BALANCE
10/31/2015	Balance forward		0.00
11/20/2015	INV #105485. Due 11/20/2015.	1,575.00	1,575.00
11/21/2015	INV #105207. Due 11/21/2015.	500.00	2,075.00

CURRENT	1-30 DAYS PAST DUE	31-60 DAYS PAST DUE	61-90 DAYS PAST DUE	OVER 90 DAYS PAST DUE	AMOUNT DUE
0.00	2,075.00	0.00	0.00	0.00	$2,075.00

Exhibit 9

CLARK'S SEPTIC SERVICE INC.
P.O. BOX 1475
HUGHSON, CALIFORNIA 95326
(209) 537-6624

Cmc landholdings

NAME: CLARENCE OLIVENA — DATE: 11-20-15

ADDRESS: Linnwood

PHONE: TURLOCK, CA

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D
			X		

QTY.	DESCRIPTION	AMOUNT
4.5	Hours LABOR -	
	PUMPED	
	DAIRY SPILL.	
	We Were the	
	last one here	
	No one to sign	
	tag	

TAX

RECEIVED BY

TOTAL 1575.00

105485

Thank You

All claims and returned goods MUST be accompanied by this bill.

CLARK'S SEPTIC SERVICE INC.
P.O. BOX 1475
HUGHSON, CALIFORNIA 95326
(209) 537-6624

NAME: CMC Landholding LLC — DATE: 11/21/15

ADDRESS: Linwood & Washington

PHONE: Turlock, Ca 209-988-5854

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D
			—		

QTY.	DESCRIPTION	AMOUNT
1	pump water from	
	drop at Hardy &	
	Rain flower Rd	
	800 gal	
	2.0 hr	

TAX

RECEIVED BY

TOTAL 900.—

105207

Thank You

All claims and returned goods MUST be accompanied by this bill.